ENZYME EXTRACTION AND PURIFICATION PROCESSES

Publication number: JP61500299 (T) Publication date: 1986-02-27

Inventor(s): Applicant(s): Classification:

- international: G01N33/50; C12N9/00; C12N9/04; C12N9/12; C12R1/01;

G01N33/50; C12N9/00; C12N9/04; C12N9/12; (IPC1-

7): C12N9/04; C12N9/12; C12R1/01; G01N33/50

C12N9/00; C12N9/04; C12N9/12 - European:

Application number: JP19840501690T 19840419

Priority number(s): AU1983PF08995 19830421; AU1984PG03049 19840103

Abstract not available for JP 61500299 (T)

Abstract of corresponding document: WO 8404329 (A1)

A process for the preparation of an enzyme extract containing glucose 6-phosphate dehydrogenase, glucokinase, pyruvate kinase and fructokinase, derived from microorganism cells, by subjecting Zymomonas mobilis bacterium cells to extraction with an extraction medium comprising a partially water-miscible organic solvent; a non-ionic surfactant; and lysozyme; under neutral to alkaline pH conditions to provide an extract containing said enzymes. The process can be integrated with a process for the sequential isolation of the glucose 6-phosphate dehydrogenase, glucokinase, pyruvate kinase and fructokinase, present in the enzyme extract, by sequentially contacting the extract in a buffer with a plurality of affinity chromatography adsorbents each of which is a protein-binding dye bound to a support matrix and selective with respect to said enzymes so that glucose 6-phosphate dehydrogenase and glucokinase are isolated from the extract by the correspondingly selective adsorbent, followed by isolation of pyruvate kinase and fructokinase by the correspondingly selective adsorbents, then elution to recover each enzyme from the correspondingly selective adsorbent of said plurality of adsorbents, with optional purification of each enzyme.

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WO8404329 (A1)

US4623625 (A) JP2524573 (B2)

GB2147000 (A) EP0139705 (A1)

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